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D. MACLEAN, M. D.....Editor
D. D. CROWLEY, M. D.....Editor

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ORIGINAL COMMUNICATIONS.

ARSENIC.

BY M. HILL LOGAN, M. D., SAN FRANCISCO, CAL.

ARSENIC was first spoken of by Aristotle and Discoridies, and named by the latter arsenicon, from the Greek, (*arsenicon*) meaning potent. The chief source from which the ancients obtained it was realgar and orpiment; the red and yellow sulphides. It was anciently used by the priests of Ceylon in a potion prepared with magic rites. The yellow sulphide, As_2S_3 , was used in a preparation by the Egyptian female to remove the hair from the pubes; in about such a mixture as the following:—

Auripigmentum grs. xxx.

Fresh quick lime ʒ. vi.

Starch lbs. ii.

But they principally used it as a pigment.

Coming down to a later date we find it eaten in some parts of the world; particularly in Styria, and Hungary, the mineral regions of Lower Austria. During the smelting of lead, zinc, iron, and other ores, it collects in the long chimneys, where it is oxidized to white arsenic (As_2O_3). It is collected and eaten by the majority of these people, and called by them hidri. The habit of eating it is handed down from

generation to generation, and is said to be of considerable antiquity. The purposes for which it is taken are as follows:

First, to give a soft freshness and beauty to the skin.

Second, to give a plump round figure.

Third, to give a greater power of endurance, and length and strength of wind, so that long marches can be made, and great heights climbed without exhaustion; for which purpose a small fragment of the white arsenic is put into the mouth, and allowed to dissolve, which it does very slowly. The effect is described as astonishing; heights are easily and rapidly ascended, which could not otherwise be surmounted without great difficulty of breathing.

The young peasants of Styria both male and female who use it, are described as being remarkable for clear and blooming complexions, full round figures, and a general healthy appearance. The quantity taken by those beginning the habit varies with age and sex, but never exceeds a half grain, taken two or three times a week, in the morning, fasting, until they become accustomed to it; as the effects diminish the dose is increased. Dr. Von Tschudi in describing a peasant says: "The peasant R——, a hale man of sixty, who enjoys capital health, takes for every dose a piece about two grains in weight. For the last forty years he has continued the habit which he inherited from his father, and which he will transmit to his children." Some peasants take as high as four to five grains, and even as high as six grains at one dose, and take one or two doses a week. The good effects are said to last about eight days. Two men taking large doses were examined and found to be perfectly healthy; but arsenic was found constantly in their urine. No symptoms of poisoning occur to any of these people, unless the habit is left off for awhile, when the usual symptoms of arsenic poisoning occur, and the only relief they can get is to resume the habit again. Thus it has become an absolute necessity of life.

The effects of arsenic on animals are the same as on man. The practice of giving it to horses is quite common in Vienna;

as it fattens and gives them a fine, bright, glossy and healthy appearance, and strength of wind. It also produces the much admired foaming at the mouth of fine livery horses. It is sometimes given to horses in mountainous regions where the atmosphere is rare, and where they have to draw heavy loads up hill, as it conserves their strength and wind. The use of it must be kept up with horses or the same effects follow as with man.

The diffusibility of arsenic is well illustrated on animals. Within an hour and a half it may be extensively diffused throughout the body, and its elimination begins during this period. It has been detected in the urine of horses three to five hours after ingestion, while the horses were yet alive; but it has been found in considerable quantity in the bladder of a dead horse one hour after being taken.

When injected into the veins of a dog, it may be detected three to five hours afterward in the urine. But its elimination by this channel does not seem to be always certain, for occasionally after large doses are taken, we fail to detect any in the urine. It is even said that the urine may be diminished in quantity; but this being the exception, it probably depends more on some abnormal or diseased state of the gastro-intestinal tract, or kidneys, rather than to any peculiarity of arsenic.

In the case of a lady who took a large dose of arsenic, and recovered, it was found in decreasing quantities in her urine up to the twenty-fifth day, when it disappeared altogether. So we may conclude that the urine is the important medium for the elimination of arsenic. The detection of it in the urine proves conclusively that arsenic was taken; but the non-detection of it does not prove that it is not in the body. The accumulation in the blood of a certain quantity of arsenic, is necessary before the symptoms of poisoning show themselves. The rate of blood saturation varies according to circumstances. The occurrence of certain symptoms may be taken as indication of the poison having reached and produced its effects on the blood; thus faintness, syncope, and general depression, with an indescribable uneasiness, are

among the first symptoms, and as a rule they occur from five to fifteen minutes after the taking of arsenic in solution; showing thereby the wonderful rapidity with which it is absorbed and diffused through the blood. If sufficient interval be allowed for its elimination, quantities can be taken in a few days which would destroy life in a few hours. This eliminating process is a slow one; and if quantities be taken a little in advance of what can be immediately eliminated, part of it will be deposited in some of the viscera of the body; the liver receives the largest amount, the kidneys next. If the dose taken be large, the deposit in the liver is found to increase up to about the fifteenth hour after taking; and if the patient survive, it will steadily diminish until about the twenty-fifth day. It may be found in the liver four hours after taking; from which it seems to be eliminated by the bile, in which it is generally found.

With reference to absorbed arsenic there are two points requiring careful consideration. First, the extent to which it is diffused through the body, and second, the absolute quantity deposited in the organs. The quantity deposited, depends on the size of the dose, or the frequency with which small doses are taken. A pregnant female at the fourth month was poisoned with a fatal dose of arsenic; the poison was found in the foetus, and the placenta—which contained more than the foetus—some in the uterus, but none in the liquor amnii; even the entozoa found in the body were thoroughly impregnated with it. It has also been found in the bones. In experimenting on fowls, it has been discovered in the developing yolks in the ovisacs.

The symptoms of acute arsenical poisoning are various, depending on many circumstances, such as what particular compound is taken, size of the dose, vehicle taken in, age of the patient, how long before or after a meal, condition of the blood, idiosyncrasies of the patient, and many other things. The average time for these symptoms to appear is a half hour to an hour—by some a quarter of an hour. Eight minutes have been mentioned. Sir Christison cites a case where the

symptoms appeared while the patient was in the act of eating a poisoned cake. Todd says, two drachms in two hours on an empty stomach. Five hours, Orfila. Seven hours, La Chese. In a young lady eight hours, M. Tnonelier. Violent symptoms in twenty-three hours, then death in half an hour, Mr. Clegg. The active symptoms generally continue the first ten hours.

Nature of the symptoms. First, faintness followed by depression, nausea and sickness; then, an intense burning pain in the region of the stomach, increased by pressure the pain in the abdomen becomes more and more severe, and there is violent vomiting of a brown turbid matter mixed with mucus, and sometimes blood, followed by *tenesmus*, and more or less violent purging, discharges tinged with blood, accompanied by severe cramps in the calves of the legs. The vomiting is generally violent and incessant, and excited by any substance taken into the stomach, with burning heat in the throat, intense thirst, pulse small, very frequent, irregular, and sometimes imperceptible, skin cold and clammy in the stage of collapse; at other times very hot, or rapid alternations of heat and cold. There is great restlessness, and painful breathing, from the tender state of the abdomen. Before death, coma sometimes supervenes, with paralysis, tetanic convulsions and spasms in the muscles of the extremities. Symptoms which prove fatal are as a rule continuous, but sometimes there are remissions and even intermissions, which may lead to a disappointed hope of recovery. The pain is similar to a fire in the body, but it is not always a constant symptom. Some and even many of these symptoms may be wanting. Such as vomiting and purging, and the stomach still be violently inflamed. The common symptom, intense thirst, may be absent, and many others as the following case will show. A young man aged twenty-two, took six drachms of arsenic. In half an hour he was vomiting, with severe pain in the abdomen, rapid pulse and slight convulsions of the lower limbs; in two hours purging supervened, with a constant inclination to micturate, pain in the

bowels almost intolerable, convulsive movement of the limbs more frequent, pulse more feeble, still very quick. He died in less than four hours, after a dreadful fit of convulsive laughter, his limbs becoming suddenly rigid. In this case many of the common symptoms were not present. The post mortem showed the stomach highly inflamed, the mucous coat looked as though it had been beautifully injected, and two drachms of arsenic were found.

The symptoms of chronic arsenical poisoning are, paralysis of the muscular system, complete loss of sensation in the fingers, wasting fever and general derangement of functions, inflammation of the conjunctiva, suffusion of the eyes and photophobia.

Post mortem appearances are generally confined to the stomach and intestines; no matter how it enters the system, it acts on the stomach, hence the inflammation of that organ is not due merely to a local irritant, but to a selective affinity of the poison, of which we will speak further on. The blood is of a darker color, and effused into various parts, between the folds. Death generally takes place before ulceration, gangrene or perforation is set up. In cases of death in two hours or more, the stomach is found highly inflamed; even after years of interment the stomach,—which is usually well preserved—shows unmistakable signs of having undergone severe inflammation.

Arsenic is not a corrosive, but an irritant poison, it has no decided chemical or corrosive action on dead animal tissue, and the changes met with in the stomach and intestines of a person poisoned with it, are referable to an inflammation caused by irritation.

Death sometimes occurs after all the arsenic has been eliminated from the body. In these cases death is the result of changes within the blood and nervous tissue; and perhaps exhaustion is also a large factor in causing death. As arsenic is not a normal constituent of the body, the whole system acts to expel it, hence the exhaustion.

From what has been said we can safely draw the following conclusions:—

First, that to be a poison, arsenic must be absorbed and circulated by the arterial and capillary system.

Second, that the fatal effects do not depend on the quantity taken, but on the quantity absorbed in a given time.

Third, that the fatal effects depend on absorption taking place faster than elimination.

Fourth, that in some cases a person may die from the effects of arsenic that has been eliminated from the body.

Pure metallic arsenicum is as harmless as chalk; it only becomes poisonous by virtue of the faculty with which it absorbs oxygen. Its compounds are generally tasteless, particularly the white or common arsenic As^2O^3 .

The physiological action of arsenic in small doses is very beneficial, as it lessens the natural waste of the body, and diminishes the quantity of carbonic oxide discharged from the lungs in a given time; and consequently less oxygen is required, hence the greater ease in breathing. The fat and tissue which would be used up in making the carbonic oxide discharged by the lungs, are stored up, hence the plumpness of those who eat it.

Let us follow arsenic through the body, and examine its action step by step. It will first be necessary to remember that arsenic is a negative element, and its compounds may be either neutral or positive. First taking very small doses and becoming habituated to it. It does not stop long enough in the mouth or cesophagus to produce any of its characteristic effects. When it enters the stomach it comes in contact with a positive condition, the gastric juice, and there is a reaction, by which the pepsin and other matters are liberated, and together with the arsenic are absorbed in the intestines, and carried to the venous blood, which is a negative condition, and the effects of like conditions are repulsion; hence the rapid diffusion through the blood. In the lungs the blood becomes positive and continues so throughout the arterial system. Then there is a reaction and combination

between the positive blood and negative arsenic; but there is so little arsenic, and the reaction is so small that there are no bad effects. The reaction may be partly with the haemoglobin of the red corpuscles, diminishing their capacity of carrying carbonic oxide. The making of carbonic oxide is the destruction of fat in the blood and tissues, and if less fat is destroyed, less carbonic oxide is carried by the globules, and more fat is deposited or retained in the tissues. There is at the same time a transfusion through the fascia of a minute quantity of the arsenic, which is now in the form of an organic compound, and is deposited in the integument, making it more homogeneous and transparent. While in the blood a certain amount of arsenic is carried to the brain, which quantity being small, the action is very mild; the brain tissue being a positive condition, there is a combination; the reaction being mild it creates a feeling of well-being, exhilaration and contentment. The effects of large doses are altogether different. After taking a large dose of arsenic, it can be detected in the saliva of the mouth for some length of time afterwards. The action on the stomach is very severe, on account of a violent reaction set up by the positive gastric juice and negative arsenic, causing great irritation and consequent inflammation. The general contention in the stomach calls into action the pneumogastric and other nerves, which by reflex action cause vomiting, severe and prolonged, and an irritable state of the stomach with nausea and vomiting for a long time afterwards. As an emetic arsenic acts in two ways. First, locally, by making an impression on the peripheral ends of the gastric nerves, which is transmitted to the spinal center, and returned in the form of a motor impulse. Second, as a systemic emetic, producing its effects through the medium of the blood, and the vomiting is only one of the results of the general disturbance of the nervous system. In the intestines it has a similar reaction, causing frequent discharges, which are often bloody. It is rapidly diffused through the lymphatic and venous systems; the right side of the heart is excited and enfeebled. A certain amount of con-

gestion is set up in the lungs, the reaction here is not so noticeable, because the oxygenated blood being positive, the plus and minus action is about equalized, but when it reaches the left side of the heart, we have an opposite reaction going on in each side, which causes a feeble, very rapid and almost imperceptible pulse. Through the arteries the nerves all over the system are excited, convulsed or paralyzed.

The chemical action of arsenic is probably in part with the haemoglobin of the blood. Thus $2 C^{900} H^{960} N^{154} FeS^3 O^{179} + As^2 S = 2 C^{900} H^{960} N^{154} As^2 S^3 O^{179} + Fe^2 S^3$.

It is certain that there is a reaction with the complex organic proximate principle of the body Lecithine, $C^{44} H^{90} NPO^9$, which is found in the plasma and red globules of the blood, in the bile, the spermatic fluid and particularly in the tissue of the brain, spinal cord and nerves. In the blood lecithine is in proportion of about twenty per cent. and in the brain about thirty per cent. The phosphorus in this compound is in the form of phosphoric acid, $H^3 PO^4$, and by the introduction of arsenic into the system, there is a reaction set up, by which the phosphate lecithine is converted into an arseniate lecithine.

Thus: $C^{44} H^{90} NPO^9 + H^3 AsO^4 = C^{44} H^{90} NAsO^9 + H^3 PO^4$.

The brain, blood and nervous system so changed, are no longer fitted to perform their functions of life, and general paralysis is followed by coma and death.

PTELEA TRIFOLIATA—WAFER ASH.

BY I. G. M. GOSS, A. M. M. D.

PTELEA TRIFOLIATA is called by the people, Wingseed, Shubby-trefoil, and Swamp Dogwood. It grows from six to ten feet high, with trifoliate leaves; the leaves are marked with pellucid dots; the leaflets are sessile, ovate, short, acuminate, downy beneath while young, crenulate, or obscurely toothed; the lateral leaves, inequilateral, the terminal ones crenate at the base, and are from three to four and a half inches long, by from

one and a quarter to one and a half inches wide. The flowers are polygenous, of a greenish-white color, nearly half an inch in diameter, and of a very disagreeable odor, disposed in terminal corymbose cymes. Stamens, generally four, style short; fruit, a two-celled samara, nearly an inch in diameter, winged all around, nearly orbicular. It grows in Georgia, on sandy bottoms, and in some of the other States, on similar lands, flowering in June. The tree or shrub is easily distinguished by the above peculiarities, and by its very strong, disagreeable odor.

It is just now attracting much attention in and about Rome, Georgia, as a positive tonic and antiperiodic. It was introduced to the notice, first of the people, then to the physicians of Rome, Georgia, by a man who saw it used by my directions near Athens, Georgia, during the late war. It has long been used by Eclectic physicians, but not by Allopaths until very recently, and only by a few in Rome, Georgia, and near that place. In large doses, it causes headache, great mental confusion, nausea, ringing in the ears, and sometimes pain in the ears. If taken too long, in large doses, it causes sharp, cutting pains in the region of the liver, and in some cases, it has produced enlargement of that organ, and even jaundice. It also has produced soreness of the stomach in over doses, and if continued in over doses, it produces severe griping, contractive pain in the stomach and bowels, and finally, it produces diarrhoea, with great dyspnoea. It also often causes a rash upon the skin, resembling urticaria or nettle rash.

Therapeutical effects.—As a tonic, it resembles Hydrastis, Nux Vomica and Gentian, and may be used with good effect in cases of indigestion and debility. The dose, as a tonic, is 10 to 15 gtts. of the saturated tincture, every three or four hours. I prize it highly in asthma. I have used this, with the Silphium Gumniferum and Grindelia Robusta, with fine success in many cases. Its dose in Asthma is from 15 to 25 gtts. of the tincture *terdie*. It is a valuable remedy in chronic erysipelas, given in doses of 10 gtts. three times a day. It is also a remedy for urticaria.

As an anti-periodic, Ptelea is one of the best substitutes for quinine that I have ever tried. During the late war, I had on hand several bottles of the fluid extract, and not being able to find quinine in market, I began to use the Ptelea in remittent and intermittent fever, and found that it would relieve either form of fever in three or four days, and I noticed that the fever, when broken up with the Ptelea, was not as liable to relapse as when broken up with quinine. And its value in chronic chills or ague commends it to our consideration. I find that it has no superior in chronic chills, and but few, if any, equals. Where the chills have been returning every seventh, fourteenth or twenty-first day, the Ptelea, given in doses of 25 to 30 drops, three or four times a day, for three or four days, will almost always cure the disease, in fact, I have no recollection of its having failed in a single instance, and I have used it now for some twenty-five years. And in cases of phthisis pulmonalis, where the digestion is feeble, and the appetite poor, this article combined, or alternated with the compound syrup of the hyperphosphites, will do more towards building up the strength than anything I know of in the long list of remedies used in this disease.

ALAMEDA COUNTY ECLECTIC MEDICAL SOCIETY.

THE Alameda County Eclectic Medical Society met at the College Building, Oakland, at 7:30 P. M., Sept. 20th.

After the roll-call of members, the applications of Dr. Springsteen, recently from Nevada, and Dr. Sage, from Nebraska were accepted, and by unanimous ballot of the Society were elected members. Dr. Warren described a case of lead poisoning, which made a rapid recovery, the principal treatment being acids and small doses of strychnia.

Dr. Springsteen recommended the use of chlorate of potash and sulphur in combination or with tartaric acid, thinking strychnia to be an excellent remedy when there was a tendency to paralysis. After discussing this subject to some extent,

Dr. Crowley presented to the Society, for their consideration a method of overcoming contracted ham-strings, by using an anterior splint instead of a posterior. When the contraction of either of the ham-strings is to be counteracted by force and not by tenotomy, he recommends an anterior splint extending from the tarsal region to the groin. The force is applied to the leg and thigh, causing the limb to become parallel to the splint. The resisting point being the patella which is well padded. By the use of this splint, liniments of any kind can be applied to the popliteal space. The patient can at the same time walk by the help of crutches. The Doctor also explained a modified crucial incision, stating that generally in removing large tumors, it was customary to make a crucial incision, making one directly across the other, the four corners of the flaps coming in direct apposition. These small points, so far distant from the main circulation often sloughs and repair takes place by granulation instead of the first intention. The modified crucial incision, instead of making the second incision directly across the first, is made only to the first, then commencing some distance away on the first it is prolonged the required distance. Two corners in two different places, come in contact with the even edge of an opposite flap. Repair takes place readily and the sutures give a greater support to the flaps.

After a brief discussion upon the efficacy of both splint and incision, by Drs. Sage, Springsteen, Warren and others, the subject, "Diabetes," was chosen for our next regular meeting, and the Society adjourned until the second Tuesday of October, to meet at College Building at 7:30 p. m.

D. D. CROWLEY, M. D.,
Secretary.

THIRD DAY—FRIDAY, AUGUST 5TH.

ADDRESS ON MEDICAL LITERATURE BY JOHN S. BILLINGS,
M. D., U. S. A., AT THE INTERNATIONAL MEDICAL CONGRESS.

AFTER some introductory remarks, the speaker said: "It is usual to estimate that about one-thirtieth part of the whole

mass of the world's literature belongs to medicine and its allied sciences. This corresponds very well to the results obtained from an examination of bibliographies and catalogues of the principal medical libraries. It appears from this that our medical literature now forms a little over 120,000 volumes properly so-called, and about twice that number of pamphlets, and that this accumulation is now increasing at the rate of about 1,500 volumes and 2,500 pamphlets yearly.

"Let us consider the character of this

ANNUAL GROWTH

somewhat in detail, first giving some figures as the number of those who are producing it.

"There are at the present time, scattered over the earth, about 180,000 medical men, who, by a liberal construction of the phrase, may be said to be educated—that is, who have some kind of a diploma, and for whose edification this current medical literature is produced. Of this number about 11,600 are producers of or contributors to this literature, being divided as follows: United States, 2,800; France and her colonies, 2,600; the German Empire and Austro-Hungary, 2,300; Great Britain and her colonies, 2,000; Italy, 600; Spain, 300; all others, 1,000. These figures should be considered in connection with the number of physicians in each country; but this I can only give approximately, as follows: United States, 65,000; Great Britain and her colonies, 35,000; Germany and Austro-Hungary, 32,000; France and her colonies, 26,000; Italy, 10,000; Spain, 5,000; all others, 17,000.

"It will be seen from these figures that the number of physicians who are writers is proportionately greatest in France and least in the United States. As regards France, this is largely due to the requirement of a printed thesis for graduation, which of itself adds between 600 and 700 annually to the number of writers.

"Excluding popular medicine, pathology, pharmacy, and dentistry, all of which were included in the figures for the annual product just given, we find that contributions to med-

icine, properly so-called, form a little over 1,000 volumes and 1,600 pamphlets yearly.

"For 1879, Rupprecht's 'Bibliotheca' gives as the total number of new medical books, excluding pamphlets, periodicals, and transactions, 419, divided as follows, viz.: France, 187; Germany, 110; England, 43; Italy, 32; United States, 21; all others, 26. These figures are, however, too small, and especially so as regards Great Britain and the United States. The 'Index Medicus' for the same year shows by analysis that the total number of medical books and pamphlets, excluding periodicals and transactions, was, 1,643, divided as follows: France, 541; Germany, 364; United States, 310; Great Britain, 182; all others, 246. This does not include the inaugural theses, of which 693 were published in France alone.

THE SPECIAL CHARACTERISTICS

Of the literature of the present day are largely due to journals and transactions, and this is particularly true in medicine. Our periodicals contain the most recent observations, the most original matter, and are the truest representations of the living thought of the day, and of the tastes and wants of the great mass of the medical profession, a large part of whom, in fact, read very little else. They form about one-half of the current medical literature, and in the year 1879 amounted to 650 volumes, of which the United States produced 156; Germany, 129; France, 122; Great Britain, 154; Italy, 65; and Spain, 24. This is exclusive of journals of pharmacy, dentistry, etc., and of journals devoted to medical sects and isms.

"The total number of volumes of medical journals and transactions of all kinds was, for the year 1879, 850, and for 1880, 864. The figures for 1880 are too small, but the real increase is slight. During the year 1879, the total number of original articles in medical journals and transactions which were thought worth noting for the 'Index Medicus' was a little over 20,000. Of these there appeared in American periodicals, 4,781; in French, 4,608; in German, 4,027; in English, 3,592; in Italian, 1,210; in Spanish, 703; in all others, 1,248. The figures for 1880 are about the same. It

will be seen that at present more of this class of literature appears in the English language than in any other, and that the number of journal contributions is greatest in the United States. The actual bulk of periodical literature is, however, largest in Germany, owing to the greater average length of the articles. With regard to the mode of publication. I will only say that in all countries, except Spain, the greater number of medical periodicals are monthly, while in Spain they are semi-monthly. It is this periodical literature which, more than anything else, makes medicine cosmopolitan, and although as regards new discoveries or methods of treatment it is still somewhat farther from London or Berlin or Paris to New York than it is from New York to either of these places, the discrepancy is gradually becoming less.

"Many of the medical journals are very short-lived, but the total number is increasing. In 1879, twenty-three such journals ceased, but sixty new ones appeared, and in 1880 there were twenty-four deaths and seventy-eight births in this department of literature. Over one-third of this fluctuation occurs in the United States alone, France being next in the scale, Spain third, and Italy fourth, while Great Britain is the most stable of all.

"This merely quantitative classification gives of course no idea as to the

CHARACTER OF THE PRODUCT.

"Let us now consider it by subjects. During 1879 there were published 167 books and pamphlets and 1,543 articles relating to anatomy, physiology, and pathology—that is, to the biological or scientific side of medicine. Dividing this again by nations, we find that Germany produced a majority of the whole, France being second. The proportionate production by nations of this class of literature is perhaps better shown by an analysis of the bibliography of physiological literature for the year 1879, as published by the *Journal of Physiology*. This shows 59 treatises and 500 articles in German; 17 treatises and 227 articles in French; 5 treatises and 77 articles from Great Britain; 8 treatises and 41 articles from

Italy; and 2 treatises and 24 articles from the United States. The number of authors for this product was: German, 373; French, 119; English, 59; Italian, 39; United States, 19; all others, 41. For the year 1880 the same journal reports 62 treatises and 452 articles from Germany; 23 treatises and 216 articles from France; 12 treatises and 76 articles from Great Britain; 4 treatises and 51 articles from Italy; 6 treatises and 25 articles from the United States; and 10 treatises and 31 articles from all other countries.

“When we return to the literature of the art, or practical side of the profession, the figures are decidedly different. We find over 1,200 treatises and 18,000 journal articles which come under this head, and the order of precedence of countries as to quantity is: France, United States, Germany, Great Britain, Italy, and Spain. A marked increase has occurred in the literature of hygiene during the last two years, and this especially in England, France, Germany, and the United States. The literature of diseases of the nervous system, of ophthalmology, otology, dermatology and gynaecology is also increasing more rapidly than that of the more general branches.”

The speaker then referred to the increased attention paid to the more scientific study of medicine everywhere.

While admitting the priority of Germany as regards scientific medicine, he said: “Such priority, however, is not the case with regard to therapeutics, either external or internal—in regard to which I presume that the physicians of each nation are satisfied as to their own pre-eminence. At all events it is true, that for the treatment of the common diseases a physician can obtain his most valuable instruction in his own country, among those whom he is to treat. Just as each individual is in some respects peculiar and unique, so that even the arrangement of the minute ridges and furrows at the end of his forefinger differs from that of all other forefingers, and is sufficient to identify him; and as the members of certain families require special care to guard against hemorrhage, or insanity, or phthisis, so it is with nations and races. The

experienced military surgeon knows this well, and in the United States, which is now the great mixing ground, illustrations of race peculiarities are familiar to every practitioner."

Speaking of the alleged tendency of present scientific work toward utilitarianism, he said that "this tendency was by no means universal, for science was becoming fashionable. And we see such individuals as the languid scientific swell, who thinks it bad style to be practical, who takes no interest in anything but pure science, and makes it a point to refrain from any investigations which might lead to useful results lest he might be confounded with mere inventors, exists and has his admirers. We have such in medicine, and their number will increase."

The speaker then referred to the increased fondness for book-collecting and library-making. He also discussed the future of medical literature and medical libraries. He thought that the present rate of increase would not continue. It had, indeed, already become smaller in some places, especially in Western Europe.

To those who might be discouraged at the immense bibliography of every medical subject, he would say that there were few books of any value older than the present century. Those were the works of Hippocrates, Galen, Harvey, Hunter, Morgagni, and Sydenham.

Speaking of the Index Catalogue of the library of the Surgeon-General's office, he stated that at least one-half of the references were of no value so long as the other half is accessible.

An important suggestion was made in regard to instruction in the history and literature of medicine in medical colleges. Such instruction forms no part of the course in English or American schools, nor would the writer be disposed to recommend its introduction into the curriculum if it were to be based on French or German models; but it does seem possible to take a step in this direction which would be of great value, not only as a means of general culture, as teaching

students how to think, but from a purely practical point of view, in teaching them how to use the implements of their profession to the best advantage—for books are properly compared to tools, of which the index is the handle. Such instruction should be given in a library, just as chemistry should be taught in a laboratory.

The speaker made an appeal in behalf of the bibliographer, which deserves attention.

"The editors of Transactions of Societies, whether these are sent to journals, or published in separate form, often commit numerous sins of omission in the matter of titles. The rule should be that every article which is worth printing is worth a distinct title, which should be as concise as a telegram, and be printed in a special type. If the author does not furnish such a title it is the editor's business to make it; and he should not be satisfied with such headings as 'Clinical Cases,' 'Difficult Labor,' 'A Remarkable Tumor,' 'Case of Wound, with Remarks.' The four rules for the preparation of an article for a journal will then be: 1st, have something to say; 2nd, say it; 3d, stop as soon as you have said it; 4th, give the paper a proper title."

EDITORIALS.

ARRIVALS.

DR. P. SAGE, recently from Nebraska, is now doing a fair practice in Oakland. He has been elected professor of the "Throat, Heart and Lungs," in the California Medical College.

Dr. Springsteen, who for many years resided in Nevada, has now located in Oakland. He has left behind an active practice and a position of Government Surgeon. The Doctor is a staunch Eclectic, like all men free from bigotry.

Drs. Gere, Cornwall and Bean will soon arrive in Oakland.
THERE are, according to reports read at the International

Medical Congress, about one hundred and eighty thousand medical men practicing medicine throughout the entire universe.

THE Alameda County Eclectic Medical Society still exists and flourishes. The members are more numerous, and the interest which each has for its welfare will make it a permanently organized body. This Society convenes at the College Building, Oakland, the second Tuesday of each month, where an essay is given on some medical subject, also cases in practice are presented to the Society which are fully discussed by the members.

WE would respectfully inform many of the subscribers of our JOURNAL that they have not remitted the customary two dollars to its publisher. The editors receive flattering reports as to the benefit derived from the perusal of its pages, for such they combine in returning their thanks, but would be more pleased on receiving something more substantial. Those who are in arrears please remit the above amount to

Oakland, Cal.

THE PUBLISHER.

SELECTIONS.

CLINIC FOR DISEASES OF CHILDREN.

BY PROF. J. LEWIS SMITH, M. D.

CASE I.—Paralysis of the uvula following diphtheria. This is a very frequent sequela of this disease. This child has had only a mild attack. You will notice, when I ask her to speak, the nasal twang to the voice. We shall have more to say about diphtheria later on in the course, suffice it to say at present, that it is from the commencement a constitutional disease. Though there is an affinity existing between zymotic diseases, we find that one is much more liable to be reproduced than another, thus while scarlet fever, measles, etc., rarely attack more than once, diphtheria frequently attacks the same person twice or oftener. While I show you this patient's uvula I may say that in examining a child's

throat where there is intolerance of the spatula a good view may often be obtained by getting the child to cough, or use the exclamation ah! Next to this local paralysis the most common sequela of diphtheria is nephritis and albuminuria. We should always therefore examine the patient's urine to see if this exists.

As regards treatment for this affection, strychnia is our sheet anchor. There are various preparations used, the one I prefer is the following, viz: Elix. phosphat. ferri et strychniae. One drachm of this contains 1-60 of a grain of strychnia. I give one teaspoonful added to four of water, t. i. d., and in the majority of cases the paralysis disappears in less than a week.

CASE II.—One of very common occurrence, abscess of the neck. The child had inflammation of the ear, continuing for some days, then the glands began to swell; the connective tissue became inflamed, and an abscess was formed.

CASE III is enlargement of the glands about the neck arising from the same cause as last case. Strumous children are peculiarly liable to these glandular enlargements, often in vaccinating a strumous child the axillary glands undergo hyperplasia, and abscess forms. In this cachexia, slight causes often develop severe inflammations. Some of the body tissues, as the glands, periosteum, connective tissue, skin and mucous surfaces are more liable to inflammation than others, and this strumous or scrofulous inflammation is characterized by the speedy formation of pus. I have found the inunction of the following ointment very efficacious in this class of cases.

Rx	Pulv. zinci oxidii.....	3 ij.
	Ung. hydrarg. nitrat.....	3 ij.
	Vaseline.....	3 jss.

If there shonld be much itching we should add to this, acid. carbolici gr. xiv.

CASE IV.—Child eleven months old, has had pertussis for three months, accompanied by long continued coryza, or snuffles. The pertussis if properly treated might have been

relieved in a fortnight, or less. In this child the glands of the neck are also enlarged. It is to the coryza that I wish to call your attention, for this is a subject of considerable interest. We find it occurring idopathically, and symptomatically. The chronic diseases are to be attributed to the strumous cachexia. Where it interferes with lactation as it frequently does, it is a serious disease. When first seen this child was unable to nurse, but under treatment is rapidly recovering. My treatment is to inject into the nostrils, with a glass or hard rubber, or rubber ball syringe, a solution of equal parts of lime water, and warm water, say at about 100°, the child being placed on the back with towel over the eyes; so much for local treatment. Internally I give the following:

R Ol. morrhuae..... $\frac{3}{4}$ ij.
Syr. ferri. iodid..... $\frac{3}{4}$ j.

Sig.—A teaspoonful three or four times a day.

A teaspoonful of this contains two minims of the syr. ferri. iodid. If constipation is present, the cod liver oil will act as laxative in addition to its effect on nutrition. If the child is anaemic a teaspoonful of the juice expressed from rare beef steak should be given every two hours.

CASE V.—This little patient has chorea or St. Vitus dance, you will notice the involuntary muscular twichings.

Rheumatism is the most common cause of this affection. Though in this case we get no history of rheumatism except that she used to complain of pain in the limbs; her parents have six other children all healthy, the father has been subject to rheumatism.

Statistics show that chorea is more apt to attack the left side, though in this patient it began on both sides at about the same time; it attacks the muscles of volition and in severe cases the patients cannot walk or feed themselves, and speech becomes indistinct. Among the predisposing causes, I may mention worms, injury and fright, though none of these seem to have been operative in this case.

This disease under good hygienic conditions terminates in about three months. By treatment we may hasten its

termination. I give Fowler's solution m ij. after each meal and mistur. nig. a teaspoonful three times a day. If the child goes to school the severe discipline attached to the public schools aggravates the disease. It is better therefore to have it remain at home. We find that girls are more liable to this affection than boys, and that the age of eight or thereabouts is the favorable time for its development. Of course the hygiene of the patient should be strictly attended to, the bowels kept open, plain, nourishing food given, and pure air insured. If the disease return it is to be attributed to hereditary disposition.

CASE VI.—This child has epilepsy. He is fourteen years old; has often had falls on the head, but never had convulsions, never had eclampsia when an infant; indeed, you will find that eclampsia is rare in this affection. The first evidence of his malady was revealed about a year ago, when he had symptoms of choking. This was probably *petit mal*. This went on for a short time, when more serious symptoms pronounced themselves. The patient would suddenly fall to the floor. After a second attack of this kind, he was brought here for treatment. It is important in these cases if the case is to be cured, to make a correct diagnosis early. If this is done we can control its manifestations by the free use of the bromides. I give the following.

Rx Bromid. Pot..... 3 ss.

Aqua Pura..... 3 v.

Sig.—Teaspoonful three times a day, in cold water.

SNAKE BITES.

BY W. M. SHULER, M. D., COLLETON COUNVY, S. C.

THE poison of the rattle snake, in common with other serpents of our southern clime, produces the same symptoms in men and animals, and is certainly much more violent in the heat of summer than any other season.

Immediately after the bite of a snake on the dog, horse or man (as I have frequently seen) we have all the symptoms of a shock or concussion affecting the whole nervous and cir-

culatory apparatus, and this in proportion to the virulence of the snake which has inflicted the wound.

The skin is cold and pale. The pulse almost inperceptible. The heart is agitated and beats with tremulous motion. The countenance is expressive of alarm. The patient complains of a burning pain in the wound, which is swelling rapidly.

I have seen this stage of shock continue for a period of three hours even under the best treatment. When the accident has occurred in the swamp or field, where no remedy is at hand, the dog, horse or man dies from the shock in about one hour after the bite, and often in ten minutes.

With proper treatment a stage of reaction comes on in one or two hours. The skin is hot. The heart beats violently. The pulse is full and frequent. The patient complains of nausea, vomits and is thirsty.

The inflammation increases in the region of the wound, as is shown by the swelling, heat, redness, pain, etc., which I have seen run into gangrenous spots in fifteen hours after the bite.

The experience of thirty-five years has taught me that the following plan will relieve every case where it can be adopted in time to realize its efficacy.

First tie a strong ligature between the wound and the heart tight enough to prevent the return of the venous blood. Scarify the wound freely and let the blood flow, apply the cupping glass. When the fangs of the snake strike a vein it sometimes bleeds freely. Our native negro when bitten, seeing the blood, becomes alarmed, and with old rags of cotton and spider webs stops the flow of blood, to his own detriment, and seems astonished to see me remove his dressing and solicit the discharges, but confesses to its relief.

I further continue to invite a flow from the wound by applying a warm meal poultice strongly saturated with nitrate of potash.

Pure corn whisky (mountain dew) is the best stimulant for the first stage, given in moderate doses every ten minutes, with sugar and water, until reaction takes place. It is a

grave error to push the whisky to beastly drunkenness, because its irritation provokes the nausea and fever of second stage.

When reaction takes place the ligature should be slackened, full doses of calomel and nitrate of potash will relieve all the urgent symptoms, and these should be carried from the bowels with four ounce doses of olive oil given every six hours until free purgation ensues.

Should the limb remain stiff and swollen it may be discharged speedily by rubbing four times per day with a liniment of equal parts af olive oil, spirits of turpentine and spirits of camphor

It might be asked by some of my professional brethren what of the reputed success of the Indian in the treatment of snake bites. In my opinion it is nothing but a traditional romance. I know but little personally of the wild Indian, but I am sure the half-civilized portion of the race, who are scattered among our people, will dodge a snake as speedily as a white man or a colored man, and when bitten, applies to the white physician for relief before trying a single dose of his boasted prickly ash, blood-root or rattle-snake master.

THE DOCTOR'S PRAYER.

APROPOS of the Apothecary's Prayer, which created considerable amusement at the Richmond meeting of the American Medical Association, Dr. Landon, of Remington, Indiana, favors us with the following parody clipped from a local paper:

"O, thou great and mighty Esculapuis, hear, we beseech, this our petition, and grant, we pray thee, the requests herein contained, for our wants are many, and wherewithal to supply our necessities is *non comatibus*. Send, we pray thee, a plentiful supply of intermittent fevers, that shall make our people go straightway to the doctor, for in this lies the only hope of accumulating shekels. The sound of belly ache has not been heard in the land round about for an exceeding long

time. Wilt thou in thy goodness send as a personal favor to thy petitioner a few cases of cholera morbus, for of this he makes a specialty, and the season for that blessing is now here. In thine own good time wilt thou see that the usual amount of ague is on hand, and if consistent with thy will, have the time come quickly. Thou knowest, oh thou mighty one, our dependence upon the ills that afflict the human family, and wilt Thou abundantly supply our wants. Mumps, whooping cough, measles and scarlet fever we esteem as special blessings. Should we inadvertently be the instrument of sending some poor mortal to his long home, we pray Thee that we be allowed to balance the account by being instrumental in bringing to the light of day four new-born infants (price \$5), which we will be employed to take through teething, colic and cholera infantum at reasonable charges. If in thy goodness thou canst furnish us as permanent patrons with ample means, a few old women whose ills are imaginary, we promise to do our best in keeping them convinced that they are in a critical condition, so long as their money holds out. Diphtheria and small-pox we don't hanker after, but broken bones and cancers are our special delight. Of these grant us a supply. For recreation we choose toothache and felon. The one we yank with a vim, and the other we lay open with as much pleasure as we quarter a melon. And now we earnestly and humbly ask that you suffer to be brought to our office, in the dead hour of night, a perfect specimen of human anatomy, that we may dissect the same, as our knowledge of anatomy is growing weak from long disuse, and—OH LORD!"

The petitioner is here suddenly interrupted, and the supplication is cut short.

BULLFROG OINTMENT.

THE *Pacific Medical and Surgical Journal*, August, 1881, tells of a practitioner in Alameda County, California, who found his patient using bullfrog ointment made by boil-

ing a pint of milk, then boiling a living bullfrog to paste therein, and throwing out the bones. The "ointment" thus prepared, is on the aforesaid patient's authority, the best application for sore breasts. This seems to be a return to the *materia medica* of the twelfth century; the "science" of one age surviving as the superstition of another. The *Journal's* zoological nomenclature seems to be as much awry as the therapeutics of the patient alluded to, for it calls the bullfrog *Bufo*, the generic title applied by all other zoologists to the toad.

INSANITY.

LECTURE BY JOHN P. GRAY, M. D., LLD., DELIVERED TO THE STUDENTS OF BELLEVUE HOSPITAL MEDICAL COLLEGE.

UP to the reign of Edward I. the lunatic was only taken care of to protect society. In the reign of Henry VIII. a hospital was founded for the treatment of the insane, and that institution is in existence to-day.

The history of the treatment of this class of patients was for a long time one of custody and the same routine for all, irrespective of the progress of their malady. Confinement in cells, chained, was the rule, but this after all was not much worse than the treatment of general disease at that time. I heard a distinguished English commissioner say, speaking of as far back as 1828, that he had seen rows of men and women chained in an asylum, arranged as a modern cow house, with pallets of straw. Now, however, nothing of the kind would be tolerated. The requirements of treatment are very exacting. It will not do to say "send the patient to the hospital," the doctor in attendance must be sufficiently familiar with the manifestations of the disease to know whether his patient needs hospital or home treatment; he must know just what he is doing.

Some go so far as to give the insane absolute liberty, some question whether there should be hospitals for the insane except for those who have proved themselves dangerous to

life and property. A desire should be aroused among the general profession to acquire such knowledge of the disease as will enable them to treat the insane at home. Insanity would then be recognized in its formative stage and treated before the development of incurable symptoms.

I have spoken of the professional duty in recognizing this disease early, and I cannot insist too strongly on the fact that it is to the general profession that we must look for the suppression of the disease. It is so interwoven with other disorders that no physician can consistently disregard it. The responsibilities of the general profession in this matter are indeed great.

Now what protection does the law give the insane? and I speak of the law because though simple, most are ignorant of it. In this State the law guards the insane better than in France, Germany or England. It provides that all the insane, dangerous to themselves or others shall be protected; that all the poor insane shall be placed in an institution for their treatment; that they can only be confined in jail or other place for ten days subsequent to such disposition being made of them.

The independent classes the law cannot compel. Now this the law does for the lunatic. What does it demand of the physician? No person can be confined in an insane asylum without the certificate of two physicians, permanent residents of the State, who must have practiced medicine for at least three years, and be men of acknowledged respectability; and not only this, but they must appear before some court of record and prove that they possess these qualifications. What greater guard could be thrown around the lunatic? what greater responsibility for the profession? It has been proposed that special examiners should be appointed, but this should be the province of the family physician. This is not such a mysterious disease but that the ordinary physician can become familiar with it and treat it. This is an age when the rights of the helpless are looked after; charities, much as they are talked about, spring from the heart of man.

The theories of insanity are more than one; those of the past are interwoven with the facts of medical science. The early theories regarded the disease as related almost entirely to the mental condition; a disease of the soul, in which the devil had gained possession of it. It was believed that the mind was the exclusive seat of the disease, and these theories are still held, though slightly modified. The theory held by the best men now is that insanity is a bodily disorder in which the mind's manifestations are disturbed. A man with fever or small-pox may be as delirious as an insane person.

If we wish to treat a disease successfully we must first have a knowledge of just what it is. The physician should be able to say what to do as regards air, light, baths, exercise, food, occupation, etc. He must bring to bear in the treatment of the insane the common sense rules of every day life.

HELLEBOREIN.—A NEW HEART STIMULANT.

HELLEBOREIN has been used sufficiently in the hospital to warrant some conclusions concerning its employment. It is an active principle common to the Helleborus Viridis and Helleborus Niger, the alkaloid obtained from the former being, however, much stronger than that obtained from the latter. In appearance Helleborein is a light yellow amorphous powder, freely soluble in water or alcohol. The watery solution has been preferred, and this is used hypodermically, as the local action of the drug upon the stomach and intestine is found to be irritant. This local action, produced by the drug given in a solid form or in concentrated solution, has been known for some time, and it has been usually classed among the drastic cathartics on account of its very irritant action upon the gastro-intestinal tract. Its constitutional effects have heretofore escaped notice either from the fact that they were obscured by the local action, or from the fact that the drug was so rapidly eliminated by the intestine

that too little was absorbed to produce any constitutional disturbance. It is known that its administration by the stomach delays its absorption, and is not followed at once by general effects. The method of administration most favourable to the production of constitutional effects, is its introduction directly into the circulation by injection into a vein or what is almost as effective by its injection under the skin. It is not found to act as an irritant on the cellular tissue, and has not been followed by any local disturbance more serious than temporary hyperæmia.

Upon the heart the action of the drug is very marked. It increases the force and diminishes the frequency of the heart's action, acting in a manner very similar to that of Digitalis. This effect is best produced by small doses repeated. In a number of cases of cardiac disease this action has been fully demonstrated. Where the heart action was feeble, rapid and irregular, owing to dilatation following valvular lesions the benefit derived from the use of Helleborein was very apparent. Doses of one-fifteenth grain, hypodermically, repeated every two hours, produced a decided modification in the rapidity and irregularity, and increased the power of the heart's action to the immediate relief of the urgent symptoms of cyanosis and dyspnœa. This effect was continued until the heart became regular and forcible and the distressing symptoms subsided. In cases of irregular action dependent on nervous excitement, or of palpitation attended with dyspnœa, where no valvular lesion could be made out, the action of the drug was equally apparent. After two or three doses the change in the rhythm of the beats was marked, and the pulse became regular, slower and as it recovered its tone the symptoms of discomfort were relieved. In these cases the action of the drug in increasing the arterial tension was very noticeable.

In cases of heart failure, complicating pneumonia, typhoid fever and other conditions attended by rise of temperature, Helleborein has been used successfully as a cardiac stimulant. In one case of pneumonia with complicatory oedema of the

lungs, due to failure of the heart, the drug was employed with marked effect. The patient was moribund, all efforts directed toward stimulation of the heart and relief of the œdema having proved failures. Hypodermics of Helleborein were first tried after the radial pulse had ceased. Two minutes after the injection of one-tenth of a grain, the radial pulse returned and the heart action was maintained for two hours by the use of the drug. In this case the action as a respiratory, as well as a cardiac stimulant was marked, and had the drug been employed earlier it is possible that the cardiac failure might have been overcome. The advantages of Helleborein over Digitalis are numerous. If given hypodermically it never produces nausea or vomiting. Its effects are not cumulative and unfavorable results followed when it was continued for several weeks steadily. There seems to be no danger of heart failure following undue exertion where it has been given some time, as occasionally is seen where Digitalis has been used. It does not produce the disagreeable cerebral symptoms which often follow the use of Digitalis. In several cardiac cases it was used with good effect after Digitalis had been tried but had produced no amelioration of the symptoms. Its action upon the kidneys is less marked than that of Digitalis. It produces a diuretic action probably by increasing the arterial tension and by regulating the heart and thus increasing the arterial tension, and by regulating the heart and thus increasing the blood pressure. Thus, in cases of ascites due to cardiac disease it fulfills two modications, by stimulating the action of the kidneys as well as regulating the action of the heart. But as a diuretic it is inferior to Digitalis. A careful experimental study of the physiological action of the drug on the various organs has not been made, but sufficient is already known to show that in Helleborein we have an efficient heart stimulant and diuretic.

KEITH AND LISTERISM.

PERHAPS one of the most dramatic occurrences ever wit-

nessed in any medical assemblage was the recent unexpected renunciation of Listerism by Mr. Keith. He has advocated many of its principles and much of his wonderful success in ovariotomy has been attributed to it. This acknowledgement, therefore, can but be regarded as a telling blow. It must, however, be remembered that in renouncing Listerism he does not necessarily renounce antiseptic surgery, to many of the principles of which he has long adhered and made the basis of his wonderful success. Surgical cleanliness is the great principle underlying Listerism; the ism may prove irrelevant, but the principle will be for Mr. Lister a sufficient monument.

INTERNATIONAL MEDICAL CONGRESS.

THE following, according to Punch, were the proceedings of this learned body: First day: Grand banquet. Interesting experiments with various wines. Confidential exchange of experiences after the third bottle. Second day: Grand dejenuer. Surgical operations on cold fowls and raised pies. General investigation of "mixing." Valuable results obtained by taking a combination of champagne, sherry, port, claret, pale ale, and chartreuse vert. Third day: Garden party. Examination of the action of the muscles in the game of lawn tennis. Close study of strawberries and cream and champagne cup. Supper experiments at the Albion. Extempore lecture upon the benefits to be derived by taking whisky and water internally before going to bed. Fourth day: Select dinner party of savants interested in food. Careful consideration of the effect upon the system of turtle soup, curried whitebait, canvas-back ducks, and an entirely new and original with-your-cheese-pick-me-up made of sardines, olives, truffles, cayenne pepper, tomatoes, capers, herring roes, fowls' livers and tarragon vinegar. Human capacity for absorbing champagne in extra large doses practically tested. After the experiments a long consultation with the police. Fifth day: Psychological picnic. Exercise of

nerve power of the lower limbs to the sounds of a military band. Interesting operation of a quadrille, a polka and a waltz. Day finished with a scientific supper. Preparations of different kinds of meats. Practical lectures upon the anatomy of the fowl, and duck, and the turkey. Experiments in wine temperature. Claret seventy and champagne four degrees below zero. Perambulating difficulties and optical delusions. Exercise of the vocal chords. Subject, "We Won't Go Home Till Morning." Sixth and last day: All the foreign physicians ill in bed, sending for all the English physicians. General prescription: Large doses of soda water.

SUICIDE BY DYNAMITE.

DR. A. D. LEADMAN (*British Medical Journal* July 30, 1881,) reports a case of suicide by dynamite. The patient after making a statement that led to the arrest of an innocent person for robbery, failed to appear as witness. About noon, the time he should have appeared in court, he went into his garden and placing a cartridge of dynamite in his mouth ignited it. The soft palate was torn away, the fauces rent, the tongue detached and mutilated, the teeth broken off and splintered, the superior maxillary bones separated and fractured to the orbit; the inferior maxillary bone was broken into twenty pieces. Dr. Leadman claims this is the first case of the kind on record. A somewhat similar case is that of the lunatic who blew his urethra to pieces with gunpowder, and the case reported from St. Louis equals Dr. Leadman's case in its startling character. A German manufacturer of fire-works, aged fifty-six, adopted a curious and determined means to commit suicide. He prepared a special explosive known as a cannon bomb, he selected two large stones, between which he placed the bomb; he then prostrated himself on top, and, leaning back, lit the fuse, which burnt slowly. At the expiration of five minutes an explosion ensued, by which the suicide was torn to pieces. His

intestines and fragments of his body were scattered for nearly a block. The suicide had previously suffered from depression, the result of hypochondriasis.

TYPHOID FEVER—HYPODERMIC ADMINISTRATION OF AMMONIA AND WHISKY.

A CLINICAL LECTURE BY PROF. J. M. DA COSTA, M. D.,
PHILADELPHIA, PA.

THIS man has been desperately sick. The disease fluctuated from day to day, but, while we always held the prognosis as doubtful, from the very continuation of the case we thought that, after all, recovery might occur; when, unfortunately, a profuse and exhausting intestinal hemorrhage took place. This was met by the administration of ergot internally, and by the use of hypodermic injections of whisky, to which we added a little ammonia (five drops of aqua ammonia to thirty minims of whisky). This revived him and indeed, notwithstanding two profuse hemorrhages, and a slighter subsequent one. Notwithstanding, therefore, this profuse bleeding, the hypodermic injections and the ergot seemed to control the grave phenomena. But the loss of blood was too much for him. Struggling, as he had been for weeks with this pulmonary complication, in addition to the prostration of a low fever, it was impossible for him to react. The bad condition of the blood, moreover, was shown by the livid and ecchymotic spots caused by the hypodermic injections, which afterwards formed large bullæ filled with bloody serum. This, therefore, was not so much a death from typhoid fever as from an accident in the course of the fever, the intestinal hemorrhage, which may happen in any case of typhoid, let it be light, or let it be grave. I show you here the specimens, which are particularly interesting from the point of view which we took when you saw him, concerning the pathological anatomy of the pulmonary complication of typhoid fever, and partly from the point of view of being a fatal case of intestinal hemorrhage occurring late in the course of the disease. First let us look at the lungs. There they

are presenting the appearance of the so-called pneumonia of typhoid fever. Now, you perceive, when we examine this lung, that the first thing to note is that there is increased pigmentary deposit, but, with some rare spots excepted, you do not find that the lung tissue is consolidated. At the lower part of both lungs a small portion taken out will sink in water, but all this mass which appears to you to be completely consolidated is still capable of floating. This confirms what I told you about the pneumonia of typhoid fever. It is not a true consolidation. Here and there are spots of consolidation, some groups of collapsing air-cells filled with granular material, but without true exudation of lymph, but all the other portions are densely congested. At the base of the right lung, it is true, there is a spot which looks like true pneumonic consolidation, but it is limited; the left lung is more crepitant. Here then is the pneumonia of typhoid; deep congestion, collapse of air-cells with only partial consolidation; both lungs present the same features, only differing in degree. I only add to make the case more complete, that there was subsequently no material difference in the physical signs from what you saw when he was before you. There was on one occasion a passing friction, but nothing having any special bearing upon the case. Here is the typical spleen of typhoid fever. Look at it. Larger and softer than normal, not red, but certainly increased in color. This is the kind of spleen that you will find in severe cases of typhoid fever. The liver is pale, large, and somewhat fatty. I do not consider this is as belonging to this disease proper; more likely it is due to previous changes. I do not know what his habits were, but this fatty degeneration does not belong to the typhoid fever process. Now, we will examine the intestines. I want to show you the ulcerating Peyer's patches, from one or two of which the fatal hemorrhage took place. The ulcers were not large, only of medium size, and show in some parts very evidently signs of cicatrization. You see here most distinctly shown; the enlarged solitary glands; though they do not appear ulcerated, they simply

seem to be the seat of the typhoid fever deposit. Whereas, in the lower part of the ileum, at this point, you can see the remains of a Peyer's patch, a portion of which has sloughed out; in the lower portion of its extent the process of cicatrization has commenced; the membrane is thin; it is only here, where the surface is depressed, that this ulcer is unhealed. Here is another patch, infiltrated, and the seat of superficial ulceration. Here is one very well marked; the whole patch is prominent, preserves its shape remarkably, and show, beginning abrasion, not deep ulceration. Now, gentlemen, suffice it to say that it was from one or two points—we need spend no further time in searching for them among the many spots of ulceration—from which the mucous membrane is entirely gone that these hemorrhages took place. Here is a very large, thoroughly characteristic Peyer's patch, enormously infiltrated. Here is what I was telling you about where there has been almost a perforation; you see this hole which has gone down to the peritoneal surface. A little more and this would have led to perforation. It is very probable that from this identical patch, or some other just like it, the fatal hemorrhage began. While, of course, glad of the opportunity to show you these specimens, I am sorry, from the therapeutic point of view, to have had this opportunity of so doing, and repeat that I do not think that I would have had it but for the hemorrhage which unfortunately occurred.

As you have seen this case before, I will now make some remarks upon the subject of intestinal hemorrhage in typhoid fever and its treatment. It is a remarkable fact, and one which only illustrates the different characters which different epidemics assume, with regard to this complication, that out of all the cases which we have recently had under treatment—and I do not remember in all my experience as physician of this hospital, at any time, having had so many cases of typhoid fever in the wards—it is very strange I say that this is the first case of intestinal complication that has occurred. But of this series of cases which we have been

studying, not one presented a symptom of the kind; out of all the cases I have shown to you, I have not had a single remark to make or a single suggestion to offer as regards the gastro-intestinal complications. This is the first case of intestinal hemorrhage. You have further satisfied yourselves that this hemorrhage came from several unhealed ulcers in the small intestines, which were still progressing, and which would in all probability have led—one, at least, to a perforation and fatal peritonitis.

Was this the only cause of the profuse bleeding? Does it always happen from the extensive ulceration, which you see here, that the intestinal hemorrhage occurs, or is there another element present which was largely active in producing this result? Gentlemen, the intestinal hemorrhage is not necessarily linked to extensive and progressive ulceration of the bowels. Generally, when you have marked intestinal hemorrhage, there is another element which determines the bleeding, which is as potent in producing the result as the intestinal lesion; that element is the progressive deterioration of the blood by the prolonged fever process. The hemorrhage is due partly to the ulcerative process, and partly to alteration in the blood. Even in extensive ulceration, there may be only small and insignificant amounts of blood in the stools, nothing like a marked hemorrhage. But in other cases of typhoid, hemorrhage of a serious character may accompany only slight destruction of glandular patches in the intestine. That is one point: The cause of the hemorrhage is partly local, partly general.

Was there anything in the symptoms which predicted the occurrence of this grave, and as it proved, fatal complication? Could we have foretold it? Did we suspect it? Yes, gentlemen, there was something most significant that took place, which pointed to what was going to happen. You know that this case throughout has been marked by unusual height of temperature—and this I have discussed with you—marking 106° on one occasion; 105° , you see, was often attained; indeed, it was rarely under 104° or 103° (except when tem-

porarily under the influence of the bath, or the large doses of quinia.) Well, the temperature continued elevated, until on the morning of the 25th it fell without obvious cause. We find indicated in the temperature chart a sudden drop in the temperature from 104° to 101° . This is most significant. That night the hemorrhage occurred. When you have at the height of a case of typhoid fever, which hitherto has been marked by elevation of temperature, such a marked fall as this, you will be right, in ninety-nine cases out of one hundred, in attributing that fact to intestinal hemorrhage which is taking place, or is about to take place. That is one diagnostic point which I wish to speak of. Another point is this: The signs of internal hemorrhage, of course, are the appearance of blood in the stools, and evidently impending collapse. He was perceptibly weaker. Perhaps it was the shock of the hemorrhage which weakened him; but, whether due to remedies employed, or to reaction, he grew better under the use of ergot and stimulants, and we hoped that he would be able to weather the storm, but the hemorrhages (one about a pint, the last about half as much) had been too great, and he died, exhausted, in the course of thirty-six hours after the first hemorrhage. Now for the treatment. I call your attention to the treatment pursued. Ergot by the mouth, some stimulants to relieve him, of course, but ergot by the mouth, and hypodermic injections of whisky, with a little ammonia, constituted the main reliance. I should have liked to give the ergot hypodermically, and under other circumstances would have done so, for I believe that ergot is the best agent in the treatment of intestinal hemorrhage of typhoid fever, and that hypodermic injection is the best method of giving it. Why did we not employ it here? Because the few injections of whisky and ammonia were followed by so much extravasation about the point of puncture, that the idea of administering ergot by this route was at once abandoned. We gave twenty minims every three hours, by the mouth, and after he came fully under its influence there was no more hemorrhage. What about the hypodermic injection of stimulants?

I have often resorted to the injection of whisky and ammonia in temporary conditions (three to five drops aqua ammonia, whisky thirty minims) with marked benefit. It is a powerful stimulant to the circulation, enabling us to rapidly produce an effect, and in emergencies may save life, or, at least, revive the patient and gain time, so that other remedies may have an opportunity of producing their effect.

SURGICAL AND PATHOLOGICAL REFLECTIONS ON PRESIDENT GARFIELD'S WOUND.

BY GEORGE F. SHRADY, M. D.,

Surgeon to the Presbyterian and St. Francis' Hospitals, New York.

THE case of the late President Garfield has, from its purely surgical aspect, interested every member of the profession throughout the civilized world. Never before has a wound been studied with more care, from the meager and unsatisfactory data heretofore obtainable, and never before has the accumulated experience of surgeons been more directly applied and more anxiously concentrated upon the welfare of any one patient. The reasons for this are too obvious to mention here.

Having had unusual opportunities for studying the case with Prof. Faneuil D. Weisse, of this city, we having been invited by Dr. D. W. Bliss to examine the morbid specimens in the Army Medical Museum, at Washington, it seems incumbent upon me that I should, from certain pathological and surgical stand-points, make a direct and unbiased statement.

It cannot be expected that, under the circumstances, a detailed history of the President's case will be given. Such necessarily has been done by the surgeon in charge, who, by actual presence at the bed-side, is the only one who can speak with authority concerning the symptoms presented. Nor would I presume at this time to add to the already extensive literature of the subject, were it not considered necessary to do so by the gentleman who so kindly gave me every facility

for examination, and who has deemed it a duty which I owe to the profession.

It is proper that I should speak only concerning those points of which there is a direct knowledge on my part, and offer such impressions as are founded thereon.

It is well established by the autopsy that the ball entered four inches to the right of the median line in the tenth intercostal space, and passed forward and downward, impinging upon the eleventh rib about three and one-half inches from the median line of the spinal column. The missile was then deflected to the left and downward, grazing the twelfth rib, which it fractured, and, continuing its course, entered the right side of the intervertebral fibro-cartilage between the twelfth dorsal and first lumbar vertebræ.

The ball then passed through the upper half of the body of the first lumbar vertebra, emerged on the antero-lateral face of the body of the same vertebra, half an inch to the left of the median line, thus throwing the track of the missile forward. Thence it passed behind the pancreas and lodged at the inferior border of the left external third of that organ. In its course behind the pancreas the ball wounded the trunk of the splenic artery. No vital organ was injured. The wound of the splenic artery gave rise to a traumatic aneurism which undoubtedly commenced to form immediately, and it was the final rupturing of this sac into the peritoneal cavity, which, as is now well known, caused the death of the patient, and satisfactorily explained all the symptoms during the last hours of his life.

The ball was thoroughly encysted, and the portion of the track adjoining it, for a distance of an inch, was completely closed. The position of the blood-sac evidently accounted for both of these conditions. This aneurism, situated to the left of the spinal column, and between the latter and the ball, apparently pressed upon that portion of the track next the missile and closed it. At the same time, as can easily be understood, the sac-aneurism was thus placed in the direct track of the ball. This is certainly a very significant fact in

connection with the probably fatal results in case any extensive exploration of the bullet-wound had been attempted. The aneurism was lined by concentric layers of fibrine which showed nature's efforts to obliterate the sac in the usual manner.

The evidences that the sac had not formed recently were made clear by a study of its pathological conditions. The opening in the splenic artery was on the superior and posterior aspect of its tortuous trunk directly in the track of the ball. The edges of this opening were sharply defined, but were gradually beveled to be incorporated with the walls of the attached blood-sac. This condition would indicate that the coats of the artery were cut completely through during the transit of the ball, and were not merely grazed and afterward opened by ulceration. It would thus appear that the aneurism was formed immediately after the injury and at that time attained its full size. Besides, the sac itself was evidently of long formation, as was shown not only by the firm condensation of its tissue and its intimate attachment to the edges of the cut in the artery, but by the number and apparent age of the concentric layers lining it. The burst portion of this sac was on its left anterior aspect, where not only its walls, but the different concentric layers were thinnest. The immediate invitation for this rupture was the degenerated condition of that portion of the sac, as indicated by progressive and destructive changes in its tissues. It is quite probable, as suggested by Dr. Bliss, that the blood escaping from this sac did not at first find its way into the peritonial cavity, but that there were distinct hemorrhages into the adjoining tissues, at stated intervals, until the blood ploughed its way forward and to the left, finally escaping into the peritonial cavity. On this supposition, the occurrence of the intermittent pains in the side, likened by the patient to those of angina pectoris, is, as expressed by Dr. Bliss, very satisfactorily explained.

The question naturally suggests itself at this point, whether or no, if the traumatic aneurism had not existed at the point

indicated, it would have been possible to have made a safe and satisfactory exploration of the bullet track through the spinal column. The distance from the point of entrance of the missile in the integument to the commencement of the track through the body of the lumbar vertebra was fully five inches. This fact would, for very obvious reasons, have prevented the exploration of the right side of the vertebra by the finger, the only safe way, under the circumstances, to have made the exploration. The relations of the track to the right side of the vertebra would have made it impossible to have guided intelligently any probe in the required direction. Had the latter been possible, no surgeon would have taken the risks of passing it through the vertebra presumably in such close proximity with the spinal cord. But allowing, for the sake of argument, that a probe could have been introduced safely through the body of the injured vertebra, and that there was no difficulty in tracing the track beyond it, other difficulties and dangers would have presented themselves. In the first place, there is no instrument known to surgeons that could have demonstrated the actual existence of the ball at its point of lodgment. Loosely attached, as it was, to the lower border of the pancreas, it would have been pushed before the point of the instrument, without affording sufficient resistance to indicate its presence to the operator. Further, by such an attempt, especially during the earlier periods of the case before encystment took place, there would have been a liability of dislodging the ball and causing it to fall into the cavity of the lesser omentum, and by its presence there inviting peritonitis and its attendant evils.

There was no cloth or other foreign material found in the track of the ball, and Surgeon J. J. Woodward, whose testimony concerning microscopical appearances cannot be questioned, informed me that the two small collections of matter found within the cyst, one of a whitish and the other of a blackish appearance, were respectively inspissated pus and a collection of blood pigments. All the appearance seemed to point to the fact that the reparative processes around the ball

commenced to take place immediately after the lodgment of the missile. The left kidney, which contained the abscess, was not preserved, but the report of the autopsy, to the effect that the suppuration was under the capsule of this organ, has an important bearing upon the precise cause of the lesion.

The body of the first lumbar vertebra presented the appearances of carious degeneration in the course of the wound, and, as far as could be judged by an examination of the dried specimen the intervertebral cartilages above and below it were involved in the same necrotic process. The spinal canal was not involved in the injury. It was stated to me that the shattered eleventh rib had firmly united. This bone was unfortunately not preserved. The twelfth ribs were, however, intact, and had been removed along with the last dorsal, first and second lumbar vertebræ. The broken portions of the right twelfth rib were firmly united by bone. As the liver had not been saved, the relations of the abscess to it and the surrounding parts were not demonstrable. It was stated, however, that the abscess was situated, as has already been described in the official autopsy, and that it was a closed sac of pus behind the peritoneum. Professor Weisse very ingeniously explained its presence there as a direct drainage in front of the right kidney from the lesion of the spine. This collection of pus at no time had, as far as could be learned, any direct connection with the external wound, although Dr. Bliss entertained such impression from the fact that at times a different character of pus was forced by pressure upon the abdominal walls from the orifice of the supposed track of the bullet.

In following the detailed history of this remarkable case, no significant symptoms were discoverable that would point to the injury of the spinal column as found at the autopsy, save the symmetrical involvement of the nerve origins by the concussion of the ball. When the first bulletins announced that the President had been shot near the spine, and that there were attendant nerve-disturbances in the lower extremities, a natural and legitimate inference was an injury of

some kind to the spinal cord. But when the nerve symptoms in the lower extremities disappeared, there was, for good reasons, a different diagnosis made.

As to the question of septic infection, about which so much has been said, it is well enough in this connection to recognize the fact that there are three principal grades or types of fever that follow the receipt of wounds. A mild form, known to all hospital surgeons as *traumatic fever*. It occurs early in the history of the case, runs an acute course usually in a few days, and rarely occupies a week. Its phenomena are notably those connected with any high fever, and fatal results are not common. Then we have simple *septicæmia*, so-called, which is usually associated with the idea that some decomposing organic substance has found its way into the blood. In such cases the wound, if visible, exhibits an altered character. It is apt to be humid, swollen, and may be gangrenous. The fever is persistent, with corresponding rise in temperature. The pulse is constantly frequent, and more or less sweating is present. There are occasional attacks of mild shiverings, there may be vomiting, and often there is profuse diarrhoea. At post-mortem examination there is nothing found which may be regarded as characteristic. The spleen is apt to be enlarged and softened, and so too the liver and kidneys. The blood also coagulates imperfectly. Exceptionally, in long-continued cases, there are said to be emboli in distant parts, with resultant abscesses. It is known to us in connection with dissection-wounds.

The third grade or type is what is known among hospital surgeons as *pyæmia*. In reality, the term is an incorrect one, and should not be used. Much better would it be to designate the condition as one of metastatic septicæmia. It is characterized by intermittent rigors, in which the temperature rises from three to five degrees, and then ascends still higher during the fever, but falls during the sweating, all of which phenomena follow one another much as in a case of ague.

These exacerbations have no periodicity as in ague. They

occur at any time of day or night, at first often with long intervals, and then with short intermissions. The duration of the disease depends much on the nature of the accident, the strength of the patient, and the activity of the treatment. He may survive but a few days, or many months, in which latter case the disease may be classified as chronic.

Circumscribed abscesses are found in the internal organs; or, if the disease has been very acute, these abscesses may be diffuse. When such an affection is established, the pus becomes scanty, thin, and altered in color, or it may be arrested altogether for a time; wounds or abscesses show little tendency to heal; the skin is apt to be bathed in a peculiarly sticky sweat, and the breath has a characteristic sweet odor. Marked prostration follows each exacerbation, and the patient sinks to a lower level of vitality, in which attacks of delirium are not uncommon.

It remains to decide to which class the President's case belonged. It was evidently not a case of traumatic fever, nor could it be classed with the milder form, called simple septicæmia.

From a careful study of the symptoms in connection with the examination of the autopsical lesions, the conclusion seems inevitable that the case was one which, commencing as the milder form of septicæmia, gradually developed into the graver metastatic variety, or that generally understood as chronic pyæmia. It is apparent that the lines of distinction between the latter conditions cannot be clearly drawn in President Garfield's case; but it must be admitted that the weight of evidence is on the side of metastatic septicæmia, clinically and pathologically. In fact, it is safe to assert that the symptoms pointed so directly toward the existence of this condition, that it was a matter of great surprise that more metastatic abscesses were not discovered at the autopsy. The assumption in favor of metastatic septicæmia would be satisfactorily proved by the abscess of the kidney and the multiple abscesses in the parotid, which were within the capsules of the respective organs. The theory of Dr. Bliss regarding

the production of the abscesses in the parotid is ingenious and rational, as is also his explanation that the abscess in the kidney was of traumatic origin; but it is not necessary to have an independent theory for each of these conditions. It is certainly much easier to account for them by one general explanation, as by such means all the points in the clinical and pathological history can be made consistent and reconcilable. There can be no doubt that the chief source of septic infection was the wound through the lumber vertebra.

Examining all the conditions of the wound and its relations to contiguous parts, it is easy to explain, as the result of Professor Weisse's careful and exhaustive studies at the cadaver, that the "possible course of the ball" (*vide Medical Record*, July 16, 1881) was the result of a burrowing sinus from the lesions of the ribs and spine, and that the track of the pus was in the direction of the least resistance. It was the only course which a ball deflected downward could have taken without injury to vital organs, and this was the diagnosis subsequently made by the surgeons. Nature, in reality, made a track for the pus, which on very reasonable grounds was supposed to have been the original course of the ball.

Knowing the facts, as demonstrated by the pathological lesions revealed in the President's case, each surgeon is qualified to judge as to the practicability of making extensive explorations of the wound and as to the propriety of removing the ball by operation. It is well to consider at the start that the bullet, as such, had no immediate influence upon the progress of the case, and that the real causes of trouble were connected with the conditions of the track, viz., the broken ribs, the lesions of the spinal column, and the existence of the aneurismal sac. But if the exact location of the missile had been known, and under the supposition that its presence was a source of irritation, the necessary exploration had been made, the probe would have perforated the traumatic aneurism, and the almost instant death of the patient would have been the result. From the position of the wound and the attendant conditions, through drainage at the inguinal region was

impossible, and its employment as a means of treatment would, in all probability, have added an extra complication.

From my personal examinations of the pathological specimens, and as the result of an extended and careful study of the history of the case, with every opportunity for examination of details, I am convinced that the treatment of the President was judicious and skillful from the time he was first visited by the physicians in charge until his weary struggle for life was at an end.

MORE TROUBLE AT ANN ARBOR.

THE recent regular meeting of the Regents of the University of Michigan had before it a considerable amount of business of a somewhat unusual nature. The Joy-Electric-Device matter came up and was treated to a heavy coat of whitewash,—a treatment of the case which was, by the way, not entirely a surprise—and no steps were taken to counteract the advertising which this most quackish device of recent times adroitly secured from that great institution, the University of Michigan. The Regents mistake the temper of the profession when they think they can allow a matter of this nature to pass without at least a protest in the name of the institution.

Ever since the establishment of the department of Homœopathy the professors of surgery in that department and in the department of regular medicine have each apparently been the champions of the respective divisions. The two departments apparently impinge at these two points as they do at no other, and there has been from the date of the miscegenation an irritated surface at the point of contact. The trouble between Professors Gilchrist and Maclean will be recalled by the readers of the first volume of the *News*; this continued until the former received his *conge*, and his dismissal was a scalp which proudly dangled from the latter's belt. Professor Gilchrist was succeeded by Professor Franklin, a gentleman from St. Louis, who brought with him a reputation of great abil-

ity,—surgical, polemical and physical—which he was prepared to exert in the defense of infinitesimal surgery. For a time after this new gladiator shied his castor into the arena there was an armed neutrality, each foeman cautiously feeling for the other's vulnerable points before making a thrust. Soon, however, the war which for a space did fail, trebly thundering filled the gale, and the atmosphere of the classic town became sulphurous. Language more expressive than elegant was freely exchanged, and on one occasion there was a downright rough-and-tumble, fisticuff encounter on the campus. The Regents with their well-known capacity for "smoothing things over" succeeded in patching up a peace which on its surface was fair and beautiful, but away deep down there rankled the old-time venom. A few months ago premonitory ebullitions appeared, and outsiders were on the *quivive* for another renewal of hostilities. They had not long to wait, for the pent-up feelings soon had vent, and the dogs of "wah" were again unleashed. The old-time deadly weapons (jawbones) were once more drawn, never again to be sheathed until they had raised another scalp. Professor Maclean, with the scalp of one homœopathic surgeon proudly dangling at his belt went before the Regents with charges which, properly sustained, should have given him another, even that of Professor Franklin. The honorable the Board of Regents "looked into the matter" and practically admitted that all that had been charged against that gentleman was true, but they failed to surprise any one by visiting any punishment on the transgressor. Not only did they not do so, but they, in no equivocal terms, gave Professor Maclean to understand that if they should receive any more complaints from him of his homœopathic brother's delinquencies, his (Maclean's) resignation would save him from decapitation. Encouraged by this turn in affairs Professor Franklin again rushes into the secular print, (a favorite medium, by the way, among the Ann Arbor professors), and re-iterates many grave charges which he had previously circulated with his mouth, against Professor Maclean. The latter has been estopped by

the action of the Board of Regent, from seeking redress and the denial of this privilege coupled with the insult visited on him by the honorable Board, left before him but one alternative, resignation. This he has resorted to, and the University of Michigan, as soon as the Regents accept the resignation, will want another surgeon, and inasmuch as the bed of surgery at that institution is one of roses, the applicants will doubtless be galore.

BOOK NOTICES.

LECTURES ON THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE CHEST, THROAT, AND NASAL CAVITIES, by E. Fletcher Ingals, A. M., M. D., Lecturer on Diseases of the Chest and Physical Diagnosis and Laryngology in the post-graduate course, Rush Medical College; with one hundred and thirty-five illustrations.—New York, William Wood & Company.

A MANUAL OF HISTOLOGY, edited and prepared by Thomas E. Satterthraite, of New York, President of the New York Pathological Society, Pathologist to the St. Luke's and Presbyterian Hospital, etc.; with one hundred and ninety-eight illustrations.—New York, William Wood & Company.

INDIGESTION, BILIOUSNESS AND GOUT IN ITS PROTEAN ASPECTS; Part I, Indigestion, Biliousness; By J. Miner Fothergill, M. D., Member of the Royal College of Physicians of London, Senior Assistant Physician to the City of London Hospital and Diseases of the Chest, etc.—New York, William Wood & Company.

THE WILDERNESS CURE, By Marc Cook, Author of Camp Lou.—New York, William Wood & Company.